

# US/Ireland Emerging Technologies Conference

October 19-20, 2009

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**Cutting-edge Research in Nanomanufacturing, Biopharmaceuticals and Medical Devices**

**Register Before  
September 18th,  
and Save \$50  
on the \$350  
Conference Fee!**

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## **Conference Location**

**UMass Lowell Inn &  
Conference Center**  
50 Warren Street  
Lowell, MA 01852

## **To Register...**

Contact UMass Lowell at [EmergingTechnology@uml.edu](mailto:EmergingTechnology@uml.edu) or 978-934-2405.

Announcing a two-day international Emerging Technologies Conference on Nanomanufacturing, Biopharmaceuticals and Medical Devices. Speakers from government, industry and academia will come together to present cutting-edge advances in:

- > **Biopharmaceuticals and Bioprocessing**
- > **Medical Device Technologies**
- > **Nano/Biosensors**
- > **Nanomanufacturing Technology for Bio/Medical Applications**

Discover how to commercialize and capitalize on these emerging technologies and turn them into real-world applications. Recent advances in innovative technologies address critical issues in the manufacturing and deployment of new products.

Speakers at the conference will include scientists from the University of Massachusetts, Dublin City University (Dublin, Ireland), Queen's University (Belfast, Northern Ireland), Northeastern University and other industry presenters.

**For more information, please visit  
[www.uml.edu/EmergingTech](http://www.uml.edu/EmergingTech) or contact us at  
[EmergingTechnology@uml.edu](mailto:EmergingTechnology@uml.edu).**



See reverse...



# Conference Sessions

**Monday, October 19, 2009**

## BIOPHARMACEUTICALS AND BIOPROCESSING

A changing regulatory environment and the introduction of biosimilars has put pressure on biopharmaceutical manufacturers to lower production costs and refocus on product quality. These Biopharmaceuticals and Bioprocessing sessions will cover innovative production, purification, and analytical technologies that will help biomanufacturers solve these challenging industry conditions.

### Innovative Technologies in the Manufacture of Biopharmaceuticals

*Carl W. Lawton, Director, Massachusetts Biomanufacturing Center, University of Massachusetts Lowell*

### Ireland's Center for Bio Analytical Sciences: A Biopharmaceutical Perspective

*Richard O'Kennedy, Professor of Biological Sciences, School of Biotechnology and National Centre for Sensor Research, Dublin City University, Dublin, Ireland*

### Probing Peroxidase with New Tools and Old

*Ciarán Fagan, Dublin City University*

### Bone Substitute Materials

*Dr. Nicholas Dunne, School of Mechanical & Aerospace Engineering, Queen's University*

### Tailoring Resorption Rates of Biodegradable Polymers

*Dr. Fraser Buchanan, Reader, School of Mechanical & Aerospace Engineering, Queen's University*

## MEDICAL DEVICE TECHNOLOGIES

Medical devices have emerged as an innovative and profitable area of research and development. The key to commercialization of novel medical devices is transitioning from a research lab through design, manufacturing, business formation and FDA/clinical approval. These Medical Device Technologies sessions will cover novel devices, MedTech start-ups, novel processing and tissue engineering, as well as clinical trials for medical devices.

### Novel Medical Devices from Massachusetts Start-ups

*Stephen McCarthy, Co-Director M2D2, University of Massachusetts Lowell*

### Supercritical Fluid Assisted Processing of Polymers for Medical Use

*Peter Hornsby, Queen's University*

### A Flexible Method for the Preparation of Tissue Engineering Scaffolds

*Daniel Schmidt, Assistant Professor of Plastics Engineering, University of Massachusetts Lowell*

### Overcoming the Challenges of Clinical Trials for Medical Devices

*Sheila Noone, Associate Vice Provost for Clinical Research, University of Massachusetts Worcester*

### Multifunctional Additives for Medical Polymers

*Tony McNally, PhD, Queen's University*

### Extrusion Processing of Materials for Medical Applications

*Gerry McNally, Queen's University*

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**Tuesday, October 20, 2009**

## NANO/BIOSENSORS

These sessions will present novel, innovative nanotechnology-based sensors aimed at point-of-care medical diagnostics, environmental monitoring, and chemical detection (including explosives). A variety of sensor platforms will be discussed, including antibody-based, living-cell-based, and electrical and optical property-based devices.

### Sensors for Chemical and Biological Threats

*James E. Whitten, University of Massachusetts Lowell*

### Advanced Polymer Microfabrication for Biomedical Diagnostics Platforms

*Professor Jens Ducre, Dublin City University*

### Novel Biosensor Platforms for Medical Diagnostics

*Professor Brian McCraith, Dublin City University*

### In-vivo Multi-Biomarker Nano-Biosensor

*Ahmed Busnaina, Northeastern University*

### The Nanocanary: A Living Cell Biosensor for Environmental Monitoring

*Professor Susan Braunschweig, Biological Sciences, University of Massachusetts Lowell*

### Optical Fiber Sensors for Bioapplications

*Xingwei Wang, Electrical and Computer Engineering, University of Massachusetts Lowell*

## NANOMANUFACTURING TECHNOLOGY FOR BIO/MEDICAL APPLICATIONS

The transfer of nanoscience accomplishments into useful technology is severely hindered by a lack of understanding of the barriers to nanoscale manufacturing. Nanotechnology-based commercial products cannot be realized without first understanding how one can assemble and connect trillions of nanoelements, how to prevent failures and avoid defects, and how to develop responsible manufacturing processes. Speakers will present on recent micro and nanomanufacturing developments with focus on biological and medical applications.

### Directed Assembly of Polymer Blends as Platforms for Bio/Medical Devices

*Dr. Joey L. Mead, Deputy Director, NSF Center for High-rate Nanomanufacturing and Co-Director Nanomanufacturing Center at UML, University of Massachusetts Lowell*

### Processing and Performance of Polymer-clay Nanocomposites: Implications for Processability and Performance in Medical Devices and Packaging

*Dr. Eileen Harkin-Jones, School of Mechanical & Aerospace Engineering, Queen's University*

### BioModular Multi-Scale Systems

*Dr. David Kazmer, Professor, University of Massachusetts Lowell*

### Molding Microstructures for Medical Applications

*Dr. Carol Barry, Associate Director, NSF Center for High-rate Nanomanufacturing and Co-Director Nanomanufacturing Center at UML, University of Massachusetts Lowell*

### On-Line Monitoring of Nanocomposite/Biomaterial Compounding for Process Optimization

*Dr. Marion McAfee, School of Mechanical & Aerospace Engineering, Queen's University*

### Issues in Commercialization of Nanotechnology

*Panel Discussion*